Tesis de licenciatura en Biología de Dahiana GuzmánDiseño, análisis.

Dahiana Guzmán *Estudiante, Universidad Autónoma de Santo Domingo (UASD)*

1 Diseño de malla

Basado en: Batlle (2021)

```
# Crear cuadrícula para diseño de muestreo
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(sf)
```

```
## Linking to GEOS 3.6.2, GDAL 2.2.3, PROJ 4.9.3
```

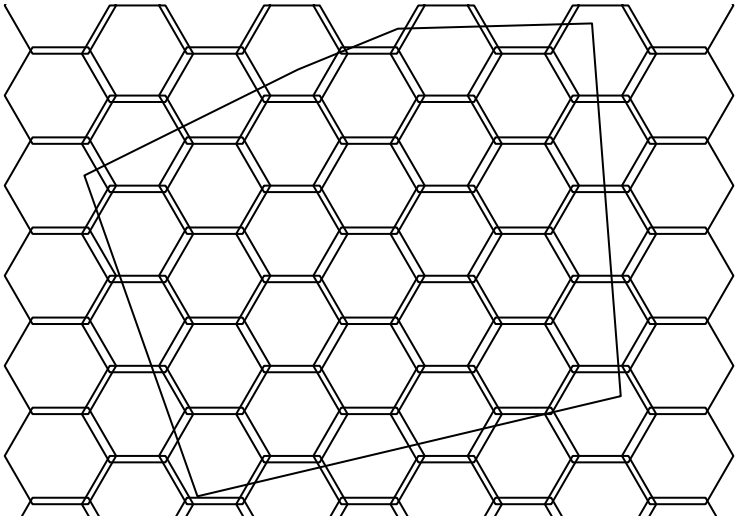
```
parque <- st_read('data/limite-parque.gpkg') # Creada en QGIS, ver nota abajo
```

```
## Reading layer ‘limite-parque’ from data source ‘/home/jr/Documentos/tesis-dahiana/tesis-licen
## Simple feature collection with 1 feature and 1 field
## geometry type:  POLYGON
## dimension:      XY
## bbox:           xmin: 402699.2 ymin: 2041878 xmax: 403116 ymax: 2042246
## CRS:            32619
```

```
cuad <- st_read('data/cuadricula.gpkg')
```

```
## Reading layer ‘cuadricula’ from data source ‘/home/jr/Documentos/tesis-dahiana/tesis-licencia
## Simple feature collection with 63 features and 5 fields
## geometry type:  POLYGON
## dimension:      XY
## bbox:           xmin: 402637.3 ymin: 2041765 xmax: 403203.5 ymax: 2042297
## CRS:            32619
```

```r
plot(parque %>% st_geometry)
plot(cuad %>% st_geometry, add=T)
```



```r
cuad2 <- st_as_sf(cuad)
cuad2 <- cuad2 %>%
  mutate(
    ENLACE=1:nrow(cuad2),
    AREASQM1=st_area(geom) %>% units::drop_units())
cuad3 <- st_intersection(cuad2, parque %>% st_union) %>%
  mutate(AREASQM2=st_area(geom) %>% units::drop_units(),
         AREASQM_PCT=AREASQM2/AREASQM1*100)
```

```
## Warning: attribute variables are assumed to be spatially constant
## throughout all geometries
```

```r
pct_eleg <- 40
cuad4 <- cuad2 %>%
  inner_join(
    cuad3 %>%
      filter(AREASQM_PCT >= pct_eleg) %>%
      st_drop_geometry() %>%
      select(ENLACE, AREASQM2, AREASQM_PCT))
```

```
## Joining, by = "ENLACE"
```

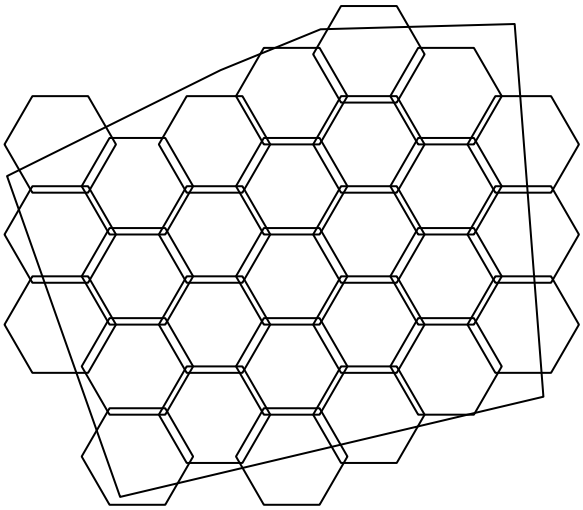
```r
cuad4$ENLACE <- 1:nrow(cuad4)
cuad4$ENLACE
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
## [24] 24 25 26 27 28
```

```r
cuad_final <- cuad4
names(cuad_final)[grepl('^geom$', names(cuad_final))] <- "geometry"
st_geometry(cuad_final) <- "geometry"
cuad_final
```

```
## Simple feature collection with 28 features and 9 fields
## geometry type:  POLYGON
## dimension:      XY
## bbox:           xmin: 402697.2 ymin: 2041872 xmax: 403143.5 ymax: 2042260
## CRS:            32619
## First 10 features:
##    id     left     top    right  bottom ENLACE AREASQM1 AREASQM2
## 1   9 402697.2 2042190 402783.8 2042115      1 4871.393 2158.696
## 2  10 402697.2 2042120 402783.8 2042045      2 4871.393 4182.277
## 3  11 402697.2 2042050 402783.8 2041975      3 4871.393 2485.221
## 4  17 402757.2 2042157 402843.8 2042082      4 4871.393 4871.393
## 5  18 402757.2 2042087 402843.8 2042012      5 4871.393 4871.393
## 6  19 402757.2 2042017 402843.8 2041942      6 4871.393 4871.393
## 7  20 402757.2 2041947 402843.8 2041872      7 4871.393 3710.643
## 8  23 402817.1 2042190 402903.7 2042115      8 4871.393 4871.393
## 9  24 402817.1 2042120 402903.7 2042045      9 4871.393 4871.393
## 10 25 402817.1 2042050 402903.7 2041975     10 4871.393 4871.393
##    AREASQM_PCT                       geometry
## 1     44.31373 POLYGON ((402697.2 2042152,...
## 2     85.85383 POLYGON ((402697.2 2042082,...
## 3     51.01664 POLYGON ((402697.2 2042012,...
## 4    100.00000 POLYGON ((402757.2 2042120,...
## 5    100.00000 POLYGON ((402757.2 2042050,...
## 6    100.00000 POLYGON ((402757.2 2041980,...
## 7     76.17212 POLYGON ((402757.2 2041910,...
## 8    100.00000 POLYGON ((402817.1 2042152,...
## 9    100.00000 POLYGON ((402817.1 2042082,...
## 10   100.00000 POLYGON ((402817.1 2042012,...
```

```r
cuad_final <- cuad_final %>% rename(a0_square_meters = AREASQM1)
plot(parque %>% st_geometry)
plot(cuad_final %>% st_geometry, add=T)
```



```
# st_write(cuad_final, 'data/cuadricula-final.gpkg')
```

Referencias

Batlle, J. R. M. (2021). geofis/forest-loss-fire-reproducible: First release (Version v0.0.0.9000). https://doi.org/10.5281/zenodo.5694017